

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-19 are pending in the application, with claims 1 and 2 being the independent claims. Support for the amendment to claims 1 and 2 can be found, *inter alia*, in the specification as filed at page 8, lines 9-12; page 12, lines 6-8; and Figure 1. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 103

Claims 1, 2, 11 and 12 are rejected under 35 U.S.C. § 103(a) as obvious over Morris *et al.*, U.S. Patent No. 6,500,556 (hereinafter "Morris"). (Office Action, page 2, numbered ¶ 3). Applicants respectfully traverse the rejection.

It is stated:

The Applicant's limitation regarding "for adhesion to a construction material" is considered to be an intended use. . . . Given that Morris discloses a foil-polymer film or film composite that meets the limitations of the present claims, it is clear that such a polymer film would be capable of performing the intended use, i.e. adhered to a construction material, presently claimed as required in the above cited portion of the MPEP, as in claims 1-2.

Morris teaches use of adhesive ethylene acrylic/methacrylic acid copolymers that are heated and extruded

to bond the aluminum foil to the LDPE polymer film, as in claims 11-12.

(Office Action, page 4, lines 10-18).

As described by the Examiner, Morris teaches a metal foil-polymer laminate having an adhesive layer of ethylene acrylic/methacrylic acid copolymers consisting of a blend of high-acid, high-melt index and low-acid low-melt index copolymers, and a polyethylene layer. The adhesive copolymer "produces a bond between metal foil and polyethylene that is durable in the presence of aggressive products" (column 1, lines 62-64). It is admitted by Morris that LDPE is "the mainstay of the foil extrusion coating industry" (column 1, lines 32 and 33) and that the object of the invention of Morris is to provide "an adhesive tie layer that will intimately bond to polyethylene, particularly LDPE, and to metal foil" (column 1, lines 50-52).

In making this rejection, the Examiner acknowledges that Morris does not specifically teach the surface energy of the copolymer surface, but asserts that it would have been obvious to one of ordinary skill in the art to try to increase the surface energy in order to achieve the surface energy optimal for adhesion of a thin film of aluminum foil to the surface of the polymer.

Applicants respectfully submit that the Examiner has misinterpreted the present claims. As recited in claims 1 and 2, the claimed reflective film includes a polymer film having two outer surfaces with adhesive properties. The first outer surface has a surface energy of at least 35 dynes such that it is suitable for adhesion to a construction material. The second outer surface, which is not the same as the first outer surface, is adhered to the Aluminum foil. Thus, in contrast to the polymer film disclosed in Morris, the polymer film in the reflective film of the present invention has an outer surface that is

not adhered to an Aluminum foil but that does have a surface energy that facilitates adhesion to a construction material. There is no teaching in Morris that the polyethylene surface of the laminate can have a surface energy of at least 35 dynes or be made suitable for adhesion to a construction material.

Finally, the Examiner has asserted that the statement in claim 1 “for adhesion to a construction material” is an intended use and that the foil-polymer film of Morris would be capable of performing that intended use. The Applicants respectfully disagree. As noted above, the polymer film disclosed in Morris would not have the desired properties of being able to bind to a construction material since the polyethylene layer has not been treated or manufactured in order to have the required surface energy of at least 35 dynes as required by the present claims. The only adhesive layer in the laminate disclosed in Morris is the copolymer layer, which is adhered to a metal foil and, as a result, unavailable for adhesion to a construction material.

Applicants submit that Morris fails to disclose or render obvious all of the limitations of amended claims 1 and 2. Thus, amended claims 1 and 2 are patentable over Morris. Dependent claims 11 and 12 depend directly from claim 1 and are patentable for at least the same reasons as amended claim 1. Withdrawal of the rejection is respectfully requested.

Claims 3-10, 13 and 15-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Morris in view of Heffelfinger *et al.*, U.S. Patent Publication No. 2002/0155308 A1 (hereinafter "Heffelfinger"). (Office Action, page 4, numbered ¶ 4). Applicants respectfully traverse the rejection.

Concerning claims 3-5 and 7, it is stated:

At the time of the invention, it would have been obvious to one having ordinary skill in the art to modify the reflective film taught by Morris by adding a middle layer of polypropylene as taught by Heffelfinger, and to adjust the density of the polymer layers accordingly because as discussed above, Heffelfinger teaches that this multilayered film structure enhances the overall structural integrity of thin polymer film or film composite laminates.

At the time the invention was made, it would have further been obvious to one having ordinary skill in the art to include an antiblock agent as taught by Heffelfinger in the polymer films taught by Morris because use of such agents are commonly known additives in the art of extruding polymer compositions, where such agents are added to modify or enhance (optimize) certain properties of multilayer films for specific end-uses as a results effective variable (*paragraph [0026]*).

(Office Action, page 6, lines 10-21). (Emphasis in original).

Concerning claim 8, it is stated:

[A]t the time the invention was made, it would have been obvious to one having ordinary skill in the art to surface treat the polymer film or film composite taught by Morris as taught by Heffelfinger because this results in a polymer film with higher surface energy and will therefore have improved adhesion to other materials such as aluminum foil layer taught by either (a) Rieke or (b) Morris.

(Office Action, page 8, lines 4-8).

Concerning claim 13, it is stated:

At the time the invention was made, it would have been obvious to one having ordinary skill in the art to modify the reflective film taught by Morris to include a curable or cross-linking adhesive disposed between the Aluminum foil and polymer film as taught by Heffelfinger because as both Heffelfinger and Morris teach, it is widely known in the art of laminating foils to films to prime the surfaces to

further improve the adhesion and prevent the delamination of the foil from the polymer film.

(Office Action, page 9, lines 9-14).

Concerning claims 9, 10, 15, 17 and 18, it is stated:

[O]ne having ordinary skill in the art would readily recognize that use of a hot melt adhesive involves use of heat and pressure to laminate materials, thus Morris both teaches use of such adhesives, the reflective film is capable of being made by a heat and pressure laminator. Morris teaches heating and co-extrusion of the polymer film composite, coating of the film onto aluminum foil, followed by cooling of the reflective film on nip rollers pressure) (*Col 4, lines 36-45*).

(Office Action, page 10, lines 9-14). (Emphasis in original).

Concerning claims 6 and 15-19, it is stated:

[G]iven the particular utility of such foil-polymer film laminates in building and insulation panels as taught by Morris, it would have been obvious to one having ordinary skill in the art at the time of the invention to adhere the foil-polymer film laminate taught by either Morris to a construction material as taught by Heffelfinger depending on the desired use of the composite laminate, because such laminates are useful in building or insulation panels.

(Office Action, page 11, lines 7-12).

With respect to the limitations of claim 6, it is stated:

[G]iven the teaching in Heffelfinger that the polymer film is capable of being adhered to craft paper, it would have been obvious to one having ordinary skill in the art to modify the reflective film of either (a) Reike or (b) Morris by including kraft paper layer(s) in the middle with the polypropylene core of Heffelfinger because one having ordinary skill in the art would readily recognize that such a layer is capable of bonding to materials such as kraft paper,

and that inclusion of kraft paper layers in the core layer will provide additional structural integrity to the overall laminate structure and reduce the susceptibility of the material to tearing easily and degrading.

(Office Action, page 11, lines 13-21).

As discussed above, Morris does not disclose or render obvious a reflective film comprising a polymer film having a first outer surface having surface energy of at least 35 dynes and being suitable for adhesion to a construction material and a second outer surface adhered to an aluminum foil. Heffelfinger does not cure the deficiencies of Morris.

As set out in the Reply filed August 18, 2009, Heffelfinger teaches a multilayer film having a core middle layer and at least one additional layer adjacent to the core layer (Abstract). Heffelfinger discloses that the film can include additives such as slip agents and antiblocking agents (page 2, paragraph [0026]). Furthermore, the disclosed film of Heffelfinger can be surface treated to increase its surface energy to ensure that a coating layer will be strongly adherent thereto (page 3, paragraph [0033]). At paragraph [0034] Heffelfinger discloses that the exposed, treated or untreated surface(s) of the film may have applied to it/them coating compositions and/or substrates:

The exposed, treated or untreated surface(s), e.g., the surface(s) of layer(s) A and/or E, may have applied to it/them coating compositions, as mentioned above, and/or substrates such as another polymer film or laminate; a metal foil such as aluminum foil; cellulosic webs, e.g. numerous varieties of paper such as corrugated paperboard, craft paper, glassines, cartonboard; nonwoven tissue, e.g., spunbonded polyolefin fiber, melt-blown microfibers, etc. The application may employ a suitable adhesive, e.g., a hot melt adhesive such as low density polyethylene, ethylene-methacrylate copolymer, water-based adhesive such as polyvinylidene chloride latex, and the like.

As defined in the present application a construction material may be a structural material, such as, but not limited to, oriented strand board (OSB), lumber based products (e.g. plywood), fibreboard or structural types of plastic sheet, or non-structural material, such as, but not limited to, Styrofoam, insulation material or non-structural types of plastic sheet such as monolithic, twin walled or triple walled polycarbonate sheet or polyisocyanurate insulative sheathing (page 17, lines 15 – 20). Nowhere in Heffelfinger is there any teaching or suggestion that the disclosed film can be made suitable for adherence to a construction material without the use of an adhesive, with or without the presence of an adhered layer of aluminum foil.

Accordingly, Applicants submit that Morris and Heffelfinger, whether considered separately or in combination, fail to disclose or render obvious all of the limitations of claims 3-10, 13 and 15-19. Withdrawal of the rejection is respectfully requested.

The Examiner indicates that claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitation of the base claim and any intervening claims. It is stated that "[t]he closest prior art does not teach or suggest the recited reflective film further including wherein the layer of aluminum foil has a plurality of perforations therethrough. The prior art does not teach motivation or suggestion for modification to make the invention as instantly claimed." (Office Action, page 12, numbered ¶ 5).

Having overcome the rejection to claim 1, Applicants respectfully request that the Examiner withdraw the objection to claim 14.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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